Report on the

SURVEY OF STATE REGULATORY COMMISSIONS' INTEREST AND EXPERIENCE IN AM/FM/GIS

Conducted by

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Report on the
Survey of State Regulatory Commissions

Executive Summary

A project was undertaken by AM/FM International in January, 1990 to inventory and work with state utility regulatory commissions or public utilities commissions. The project was initiated in response to increasing AM/FM activities in utilities, and opportunities to provide leadership and proactive support to assist utilities to maximize the adoption and use of AM/FM/GIS technologies. With responses from 40 of 50 commissions, AM/FM International's survey determined the familiarity and use of AM/FM/GIS by commissions inhouse, and their familiarity and review of AM/FM/GIS projects in utilities. The project initiated the development of a valuable knowledge base that can serve as a foundation for a variety of needs and uses. This project, and future efforts, can result in numerous short and long term benefits to both utilities and commissions. Future efforts can maintain and expand the knowledge base, while educating commissions to help promote commonality and maximum effective use and adoption of AM/FM/GIS in utilities and commissions alike.

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1. Project Benefits: Today and in the Future

The project has resulted in many current and potential benefits for utilities and public utilities commissions. Some examples include the following:

- Development of an initial knowledge base about AM/FM/GIS activities within state commissions, including their awareness and review of activities in utilities;
- Education of state commissions about AM/FM/GIS and AM/FM International;
- Determination of a designated contact person in each state commission regarding AM/FM/GIS that will be useful for future coordination and educational efforts;
- Encouragement of commonality across the states which will facilitate transfer of information from state to state, aggregation of activities in the country as a whole, and improve the quality and availability of AM/FM/GIS products and services for utilities and commissions;
- Promotion of AM/FM International as the professional association with which NARUC should work to initiate and formulate guidelines and standards for all regulated utilities; and
- Initiation of an effort that will facilitate coordination between utilities and commissions.

The project's background and progress are reviewed in the following pages. An excellent foundation has been developed by AM/FM International to promote and build upon the above benefits for a variety of future activities.

2. Project Background

The Growing Need and Potential

The growth and importance of the AM/FM/GIS industry is evidenced in many ways. Throughout the country, AM/FM/GIS technology has proven effective to improve operational and management effectiveness, but also as a valuable planning tool. According to Richard Snelling, Executive Vice President of Southern Bell Telephone and Telegraph Co., and winner of AM/FM International's 1990 Pioneer Award, "AM/FM is a strategic part of our strategic plan. . . it is now used for a myriad of purposes we never dreamed of."

Utilities in particular are benefiting from this technology. AM/FM/GIS is supporting essential local services to homes, businesses and other institutions. Utilities are a key part of the nation's infrastructure and geographic information foundation. The need and opportunities for utilities to take a leadership role was described by Del Hock, Chief Executive Officer of Public Service of Colorado in his keynote address at AM/FM International's July, 1989 Executive Management Symposium. He suggested:

- Utilities should develop relations with others and share data;
- Pioneering activities will create business opportunities for utilities; and
- Utilities may have to fund significant information development activities that will be of benefit to others.

Accordingly, utilities have a growing need, responsibility and opportunity to work with others to benefit internal operations and improve cost effectiveness, but also to meet these challenges within a national context to benefit the public.

Regulatory Utility Commissions' Influence on Utilities

Most AM/FM/GIS activities are conducted by federal, state and local agencies to meet public needs, or the private sector to meet corporate missions. Uniquely, many utilities operate as private companies, but are regulated by state regulatory commissions. AM/FM/GIS activities in utilities are increasingly impacted by the decisions of commissions through rate and service reviews.

While AM/FM/GIS activities are increasing in all sectors, state governments are becoming active as leaders of geographic information coordination. Many are adopting plans, policies and standards that are impacting the activities of utilities, local governments and others within their states. State regulatory utility commissions are recently becoming active in these statewide efforts in addition to investigating and adopting AM/FM/GIS technologies for internal uses.

Evidence is growing about the increasing influence of commissions on utilities regarding AM/FM/GIS. Some experiences were described at the Regulatory Considerations Panel at AM/FM International's July, 1989 Symposium. Conclusions and observations of the panel included:

- There have been examples where commissions have reviewed AM/FM projects without information to make informed decisions, resulting in less than preferred decisions;
- Commissions have a general lack of understanding of AM/FM;
- As AM/FM projects continue to develop, there is increasing potential of commission review and associated impact on projects; and

- There is growing need to educate commissions to enable them to understand AM/FM and associated costs before rate setting hearings or prudency reviews.

According to Marta Greytok, a Public Utility Commissioner in Texas, general relations between commissions and utilities have been quite adversarial in recent years. In her keynote address at AM/FM International's July, 1990 Executive Management Symposium, Ms. Greytok suggested that AM/FM/GIS can be a way for utilities to "gain public confidence." Some utilities and commissions are beginning to share information used in AM/FM/GIS, thus offering an opportunity to reverse this adversarial trend with potential for improved cost effectiveness of the rate payer's dollars at the same time.

AM/FM/GIS activities will continue to grow in utilities and commissions, as will the review of utilities's activities by commissions. As a result, the needs and opportunities to communicate, coordinate and educate each other will also grow.

Common Interests of Utilities and Commissions

Utilities and commissions share many common interests that form a foundation for collaborative activities. Some examples include:

- Providing the public with the best possible service at the lowest possible cost;
- Eliminating redundancy, incompatibilities and rate disputes that can be aided by better information, but at the same time providing flexibility;
- Supporting activities to increase safety and maximum value from utility investments while reducing mistakes, public inconvenience and lack of service; and
- Growing conclusions that staffs of both utilities and PUCs can be more effective through the use of AM/FM/GIS.

AM/FM International and NARUC have much to learn from each other and can build many projects to increase the effectiveness of their memberships and result in more cost effective utility service for the public.

Description of State Regulatory Utility Commissions

Most utilities, including electric, gas, telephone, water and sewer, are regulated by a state utility regulatory or public utilities commission. Virtually all large electric, gas and telephone providers are regulated, as are all investor owned utilities. State commissions also regulate motor carriers, passenger carriers and railroad safety.

PUCs are somewhat unique among state agencies. They are headed by elected or appointed commissioners. Most states have only one commission, however Texas has three commissions with related responsibilities, and New Mexico has two. Of the 53 commissions, 40 have appointed commissioners and 13 have elected commissioners. In addition, commissions often have appointed chief administrative officials, frequently titled Executive Director or Secretary in addition to staffs sometimes greater than 100 employees.

While most commissions are administratively located within the state executive branch under the Governor, just about all exercise some quasi legislative and quasi judicial power. Instead of mainly deriving their revenues from a state's General Fund, on average, state PUCs obtain 60% of their funding from regulatory assessments.

By statute, the commissions are responsible for the economic regulation of utilities within their jurisdiction through the regulation of their rates and services. Each commission has different roles and responsibilities, but most have the authority to determine regulatory procedures. For example, most prescribe accounting systems for regulated utilities and set standards for various operations. Commissions determine items permitted in rate base determinations and some can order management audits of a utility's operating performance, structure, objectives and efficiency.

The National Association of Regulatory Commissioners (NARUC) and Their AM/FM/GIS Activities To Date

NARUC is the official membership organization of the nation's commissions. In existence for over 100 years, the association studies various subjects concerning the operation of utilities, promotes the uniformity of regulations pertaining to their operations, and promotes cooperation between the states and also related federal agencies.

The association is very active and sponsors a variety of committees, subcommittees and meetings. NARUC has recently shown an interest in AM/FM/GIS. The Subcommittee on Computers began discussion about it while considering the potential for electronic submission of data from utilities to commissions to facilitate review. At the Subcommittee's May meeting, utilities were invited to participate and begin a dialogue to discuss related issues and opportunities.

In January, AM/FM International initiated this project by collecting information about NARUC. Executive Director Robert Samborski and project consultant Lisa Warnecke met that month with NARUC staff to generally discuss the technology, AM/FM/GIS activities in utilities, and to identify opportunities to work collaboratively with NARUC.

Following this initial contact with NARUC staff, then AM/FM President John Bossler sent a letter to NARUC President Sharon Nelson suggesting joint participation in the project. She referred the matter to the Committee on Finance and Technology. The Committee

Chair, Gerald Gunter, of the Florida Public Utilities Commission, then invited AM/FM International to make a presentation at the Committee's summer meeting.

AM/FM International accepted this invitation, and Dr. Bossler met with the Committee. The Committee suggested the subject of AM/FM/GIS be discussed with the National Regulatory Research Institute (NRRI). This organization serves as the research arm of NARUC and has over $2 million in funds contributed by the commissions on an annual basis. Dr. Bossler met with NRRI's Director, Dr. Douglas Jones, who is also physically located at Ohio State University where Dr. Bossler serves as Director of the Center of Mapping. Their discussion centered on further activities that could be conducted with NRRI to promote communication and coordination, while also providing educational programs for commissions. Discussions are also underway with the NARUC Subcommittee on Computers to provide similar opportunities.

3. Project Methodology

After discussions with NARUC staff, AM/FM International representatives and others, it was determined a survey should meet the following objectives. The survey should determine the familiarity of each commission with AM/FM/GIS, their internal use of the technology, and their awareness and review of AM/FM/GIS projects in their regulated utilities. The purpose of the survey was also to determine an appropriate contact person regarding AM/FM/GIS in each commission.

The survey was also designed to be compatible with two related surveys being conducted of the nation's states regarding AM/FM/GIS. The Council of State Governments (CSG) is developing a "State Geographic Information Activities Compendium" including all state agencies. A survey is also being conducted of the state Departments of Transportation by the American Association of State Highway and Transportation Officials (AASHTO) and the Federal Highway Administration. These surveys will also provide valuable information for utilities and commissions.

4. Survey Results

Tabulated Responses and Comments

Of 50 surveys distributed to state commissions, responses were received from 40 state commissions, reflecting an 80% response rate. Multiple responses were permitted to each question. Responses were as noted in the attached summary table and questionnaire.

The questionnaire had three distinct parts. Respondents were first asked to identify a contact person for AM/FM/GIS. The designated contacts ranged from a couple chief administrative officials to various data processing directors, auditors, engineers and others.

Question #1 asked about the commissions' familiarity and use of AM/FM/GIS in house.

This question revealed that eight commissions are using the technology in house, two are using technology in another state agency, and eight more are planning to use or considering its use in the future. It appears that commissions are generally just beginning to investigate and use AM/FM/GIS technology. However, those who have used it or studied options seem to be quite positive about its use and potential benefits.

For example, the Kansas Corporation Commission recently conducted an analysis which recommended the development of an automated system. The study concluded the "current mapping system is one of the most important tools for staff's use in the analysis of complicated issues". However, it stated that the manual mapping system was costly and did not provide for future mapping needs. It was determined that automated base maps would be less expensive than purchasing hard copy versions. Further, it was determined that an automated system would "better support staff's decision making responsibilities, which (would) in turn allow staff to better serve the general public and other state agencies".

The Mississippi Public Service Commission contracted with the Mississippi Automated Resource Information System (MARIS) in 1988 to help develop a plan to automate the commission's information. MARIS is a consortium of over 23 state agencies dedicated to providing geographic information management capabilities through the use of GIS and related technologies. Computing hardware and software, and a database about the state, is maintained at MARIS. MARIS conducted a needs assessment for the Commission, and its recommendation to install a work station there is now being implemented. MARIS is assisting throughout the effort.

Of the remaining respondents, twelve stated they had some familiarity and twelve others said they were not familiar with the technology. In conversation with them, a third of the states were not aware of and were referred to their statewide GIS coordinator designated by their Governor.

It appears there is definitive need for education among most commissions about AM/FM/GIS technology. Some expressed interest by specifically asking for information, and others showed evidence of taking some initiative to learn about and gather some information about it on their own.

Question #2 asked about the commissions' awareness and review of any AM/FM/GIS projects in their regulated utilities.

Eleven respondents were not aware of any utilities in their state using the technology. All but two of them had also responded to question #1 that they were not familiar with the technology in general. These responses also indicate the need for education, particularly since some of these responding commissions do have activity in their state's utilities.

Of 29 states responding they were familiar with the technology in one or more utilities, seven stated they had officially reviewed such a project in one or more utilities. Of the seven, two, California and Indiana, had done so as part of a rate setting review and these utilities were allowed cost recovery for the projects.

General Findings and Conclusions

The survey reveals that of those commissions using, planning or considering use of AM/FM/GIS inhouse, the approaches, applications, and technologies vary greatly. Some commissions are working with their utilities and other state agencies. For example, Ohio and New Hampshire are actively interfacing data with utilities. Different systems, including Autocad, ARC/INFO, Intergraph and individualized software are being used on a variety of hardware platforms.

An important role of commissions is to maintain boundary maps of service areas of various utilities. As concluded by Kansas, the expense and demand for individualized mapping products is growing. While in some cases utility service area boundaries are fairly static, in several states some territory is still unallocated. Commissions developing automated mapping are using a variety of data sources, including USGS quad sheets (in Ohio), and in most others, state department of transportation maps.

A wide variety of applications are being considered and developed by commissions. Applications for utilities, including siting of transmission lines and facilities, and pipeline safety, were identified, as well as potential real estate management and railroad regulation applications. Other potential uses include evaluation of the environmental suitability of utility corridors and the health affects of power lines.

Some additional information was obtained through various discussions with NARUC and commission staffs. General interest and support was expressed for the effort. A number of commissions requested more information and stated they were looking forward to a copy of the results. One commission staff member stated that a nationwide effort was particularly valuable because some service areas cross state boundaries. It was noted that commonality among state commissions was a growing trend and it was particularly important due to the telecommunications industry largely being served by seven Bell Regional Operating companies.

One commission staff member stated that by using this technology, "Commissions and utilities can work in cooperation, not in an adversarial role. Money can be saved and a better product produced". Another staff member commented about the productivity savings documented by their regulated utility and that recovery was "faster than expected." Numerous opportunities exist to describe, learn from and build upon success stories.

5. Project Conclusions

Building upon issues, concerns and challenges described at its July, 1989 Executive Management Symposium, AM/FM International has accomplished a great deal during the last year to assist utilities. Through this project, an understanding of the awareness and activities of utility regulatory commissions has been obtained. Moreover, the relationships between utilities and commissions are being discovered. In the few cases where

commissions have reviewed the use of AM/FM/GIS technology in utilities, their response has been favorable.

As described above, progress during the project has included a number of short and long term benefits. An initial knowledge base has been developed that can be used and built upon in the future. Contacts have been determined to encourage communication and coordination between utilities and commissions in individual states, but also across state boundaries to learn from each others' experiences and develop some commonality in approach. Unlike many sectors and industries using AM/FM/GIS, the use of the technology by commissions is just beginning. This provides a unique opportunity for organizations to work together upfront to minimize mistakes and maximize the value of investments and information sharing.

AM/FM International has exhibited its leadership as an important association of utilities and in the AM/FM/GIS industry in general. By being proactive and initiating the project, it has exhibited its belief in the importance of the technology and its application to meet public needs. By encouraging a partnership approach with commissions and their association, the National Association of Utility Regulatory Commissioners, the most cost effective adoption of this technology and the maximum utilization and sharing of information can result. This and future endeavors will help to reduce the growing adversarial relationship between utilities and commissions, and enable utilities to provide essential leadership in the increasingly important national context. AM/FM International's State Regulatory Commissioners Project was a key first step in this direction.

State Regulatory Commissions Project
Survey Results of 40 States Responding

#1 - Commission's general familiarity and internal use of GIS and AM/FM
#2 - Commission's familiarity and review of AM/FM/GIS projects in utilities

	1.1	1.2	1.3	1.4	1.5	1.6	2.1	2.2	2.3	2.4	2.5	2.6
Alabama												
Alaska												
Arizona					x						x	
Arkansas					x		x	x				
California					x		x	x	x	x		
Colorado		x	x	x			x	x				
Connecticut						x						x
Delaware							x				x	
Florida			x				x					
Georgia					x						x	
Hawaii					x			x				
Idaho						x						x
Illinois						x						x
Indiana				x			x	x	x	x		
Iowa				x							x	
Kansas	x	x					x	x				
Kentucky												
Louisiana												
Maine					x		x				x	
Maryland					x		x				x	
Massachusetts												
Michigan				x		x						x
Minnesota						x						x
Mississippi	x						x					
Missouri												
Montana						x						x
Nebraska	x						x					
Nevada					x		x				x	
New Hampshire	x						x					
New Jersey	x						x				x	
New Mexico						x						x
New York			x				x				x	
North Carolina					x						x	
North Dakota	x											x
Ohio	x						x	x			x	
Oklahoma					x						x	
Oregon												
Pennsylvania						x						x
Rhode Island												
South Carolina												
South Dakota						x					x	
Tennessee			x				x					
Texas	x						x					
Utah						x	x					
Vermont					x		x					
Virginia						x						x
Washington					x		x				x	
West Virginia												
Wisconsin			x				x					
Wyoming			x	x		x						x
TOTALS	8	2	6	5	12	12	22	7	2	2	14	11

AM/FM INTERNATIONAL
STATE REGULATORY COMMISSIONS QUESTIONNAIRE

Please return the following questionnaire on automated mapping/facilities management (AM/FM) and geographic information systems (GIS) by May 11, 1990 to the following address:

Lisa Warnecke
256 Greenwood Place
Syracuse, NY 13210

Suggestions and/or questions? Please call Lisa at (315) 478-6024.

Name of Your Agency _____

Name of Designated Contact for AM/FM/GIS _____

Title _____ *Phone* _____

Address _____

1.) Please indicate your familiarity with and your commission's use of geographic information systems (GIS) and automated mapping/facilities management (AM/FM) technologies. Check all that apply and provide a brief comment where appropriate to clarify.

1.1 8 We are currently using AM/FM/GIS technology in house
1.2 2 We are using AM/FM/GIS technology operated by another state agency
1.3 6 We are planning to use AM/FM/GIS technology in the future
1.4 5 We are considering its possible use
1.5 12 We're familiar with AM/FM/GIS technology but aren't considering commission use at this time
1.6 12 We are not familiar with AM/FM/GIS technology

Please discuss your responses on the back of this page, and attach any descriptive information.

2.) Please indicate your commission's awareness and review of any AM/FM and GIS projects in your regulated utilities. Check all that apply and provide a brief comment where appropriate to clarify.

2.1 22 We are aware of AM/FM/GIS projects in one or more utilities
2.2 7 We have officially reviewed such a project in one or more utilities
2.3 2 We have officially reviewed such a project specifically as part of a rate setting review
2.4 2 We have allowed cost recovery for investments in AM/FM/GIS technology
2.5 14 We are familiar with the use of the technology, but have not officially reviewed it
2.6 11 We are not aware of any utilities in our state that are using this technology

Please discuss your responses on the back of this page, and attach any descriptive information.

You will receive a copy of the state survey results. Thank you for your assistance!

Acknowledgements.....

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